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**From:** Newton, Aaron M (EEC) [Aaron.Newton@ky.gov]  
**Sent:** 7/18/2017 5:54:55 PM  
**To:** April.Webb@ky.gov; Pena-Molina, Ana [pena-molina.ana@epa.gov]  
**Subject:** RE: ORCR Summer Interns Project Regarding OB/OD Sites-Kentucky  
**Attachments:** Fort Knox test methods.pdf

For Fort Knox

1. Yes, the site is clean closed
2. The closure was certified by an independent registered professional engineer, which was accepted after the report was reviewed by the State.
3. I have no information on the volume of wastes disposed at the facility, however open det operations were conducted from 1983 to 1992, and open burn operations were conducted 1983-1991
4. Both OD and OB were conducted.
5. Only soil sampling – prior geological surveys apparently showed ground water sampling was not warranted. Kick out and buried munitions were apparently removed in a clean-up prior to the actual closure plan on a grid based excavation plan.
6. All equipment was removed
7. Contaminated soil was excavated, replaced by clean back fill.
8. See attached sampling plan from the closure plan.
9. Clean closure was established by risk based levels for contaminants.
10. As a federal facility, Fort Knox was exempt from closure cost estimates and financial assurance requirements. Also no further cost data appears to have been supplied.

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**From:** Webb, April (EEC)  
**Sent:** Tuesday, July 18, 2017 4:50 AM  
**To:** Schaffer, Bart (EEC) <Bart.Schaffer@ky.gov>; Newton, Aaron M (EEC) <Aaron.Newton@ky.gov>  
**Subject:** FW: ORCR Summer Interns Project Regarding OB/OD Sites-Kentucky

Aaron/Bart,

Can you start answering this questions?

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**From:** Pena-Molina, Ana [mailto:pena-molina.ana@epa.gov]  
**Sent:** Monday, July 17, 2017 4:14 PM  
**To:** Webb, April (EEC) <April.Webb@ky.gov>; Alexander, Heather (EEC) <Heather.Alexander@ky.gov>; Malone, Edward (EEC) <Edward.Malone@ky.gov>; Combs, John C (EEC) <JohnC.Combs@ky.gov>; Khan, Shaina (EEC) <Shaina.Khan@ky.gov>; Powers, Todd (EEC) <todd.powers@ky.gov>; Higginbotham, Jeri (EEC) <Jeri.Higginbotham@ky.gov>; Walker, Daniel (EEC) <Daniel.Walker@ky.gov>; Burton, Dale (EEC) <Dale.Burton@ky.gov>; Partridge, George (EEC) <George.Partridge@ky.gov>; Schaffer, Bart (EEC) <Bart.Schaffer@ky.gov>  
**Cc:** Housley, Denise <Housley.Denise@epa.gov>; Crosby-Vega, Terri <Crosby-Vega.Terri@epa.gov>; Newman, Alan <Newman.Alan@epa.gov>; McKeePerez, Nancy <McKeePerez.Nancy@epa.gov>; Danois, Héctor <Danois.Hector@epa.gov>; Gilliland, Houston <Gilliland.Houston@epa.gov>; Watson, Sarah <Watson.Sarah@epa.gov>; Greaney, Kevin <greaney.kevin@epa.gov>; Singh, Harbhajan <Singh.Harbhajan@epa.gov>; Shuster, Kenneth

<Shuster.Kenneth@epa.gov>; Kuziomko, Joseph <kuziomko.joseph@epa.gov>; Kohler, Amanda  
<Kohler.Amanda@epa.gov>

**Subject:** ORCR Summer Interns Project Regarding OB/OD Sites-Kentucky

I am writing to seek information on the closure status of the Open Burn/Open Detonation (OB/OD) units listed below to assist ORCR in a new project to assess closure of OB/OD units. With this information, EPA will be able to identify, evaluate, and document procedures, techniques, and criteria to assess, clean up, and close OB/OD units/sites in a standardized manner.

EPA has been documenting soil and ground water contamination from OB/OD units and the costs to clean them up. Given the inordinate extent of contamination and costs of clean-up that have been reported, we are now seeking to learn more about the monitoring, clean-up procedures, successes, and costs of these efforts. There is currently no national guidance on procedures to assess, monitor, and clean up OB/OD sites, nor metrics to achieve clean closure of OB/OD units. We are requesting information on the clean closure (CC) of OB/OD sites to assist us.

Please first verify the following codes for your facilities in Kentucky.

#### Kentucky

FACILITY_ID	FACILITY_NAME	UNIT_NAME	UNITs	UNIT_DETAIL_SEQ	legal status	operating status	EFFECTIVE_DATE
KY6210020479	U.S. ARMY GARRISON FORT KNOX	OTH TREAT	2	3	IS	CC	20021001
KYD061557054	DYNO NOBEL, INC.	OPENBURN	1	3	IT	CC	20030210

#### Questions:

We have a number of questions we hope you can answer regarding your clean closed/closing sites. The operating status of the facilities will determine which sets of questions are to be answered. We understand that some of this data may be difficult to find but we would really appreciate if you could dig it up for us as it will help us move forward with this project and eventually help EPA update OB/OD closing procedures.

#### Clean Closed Facilities' questions:

1. Did these sites complete clean closure or are they still in the process of seeking to clean close?
2. Did the state officially certify/approve the unit(s) Clean Closed (CC)?
3. What was the volume of waste disposed, frequency (e.g., daily, weekly, monthly, periodically), and years of operation?
4. Was it OB or OD or both?
5. What sampling procedures were used to identify the extent of the contamination, including kick-out and fallout (e.g., geophysical techniques used to identify buried munitions and fragments; trenching; grid, spokes, meandering way, visual, or random sampling of soil/for kick-out; depth; until no more found; and ground water monitoring)?
6. Were components of the unit removed (e.g., any platforms, pans, pads, and liners)?
7. What clean-up procedures and techniques were used to clean up the contaminants (e.g., excavation, soil sifting)?
8. What data was recorded and metrics used to evaluate the extent and levels of contamination?
9. What criteria was used to certify clean closure (e.g., EPA action levels)?
10. What was the total cost to achieve Clean Closed (CC) status?

We plan to have a contractor gather this information on a select number of sites from the states. The purpose of this current effort is to gather information on the status of cleanup at these sites to help us identify which sites have the best

information for our contractor to follow up with. Thus, for this effort, we seek answers to questions 1-4 and the last question in each set, and for the remaining questions we seek whether or not good information exists to answer these questions. We hope to receive this information by July 31<sup>st</sup>. Thank you for taking time to assist us with this project. If you have any questions, please feel free to reach out to us. Any information that you may be able to provide will be helpful in our project.

Sincerely,

Ana Pena-Molina  
703-308-8753

U.S. EPA Headquarters  
Two Potomac Yard  
2777 S. Crystal Drive  
Arlington, VA 22202-3553